



## Class impressions: Higher social class elicits lower prosociality



Niels J. Van Doesum<sup>\*</sup>, Joshua M. Tybur, Paul A.M. Van Lange

Department of Experimental and Applied Psychology, Vrije Universiteit Amsterdam, The Netherlands

### HIGHLIGHTS

- We investigate how target social class affects prosocial behavior.
- We offer three lines of reasoning: Fairness, status and similarity.
- Higher class targets consistently elicit less prosociality.
- This is most consistent with a fairness perspective.

### ARTICLE INFO

#### Article history:

Received 15 July 2015

Revised 31 May 2016

Accepted 3 June 2016

Available online 4 June 2016

#### Keywords:

Social class

Prosocial behavior

Social mindfulness

Social value orientation

### ABSTRACT

Social class predicts numerous important life outcomes and social orientations. To date, literature has mainly examined how an individual's own class shapes interactions with others. But how prosocially do people treat others they perceive as coming from lower, middle, or higher social classes? Here, in addition to testing effects of self social class on prosocial behavior, we also investigate how target social class affects prosocial behavior, operationalized using a social mindfulness paradigm that focuses on leaving or limiting choice to others. We offer three lines of reasoning, predicting that lower class targets either elicit greater prosociality than higher class targets (fairness), that higher class targets elicit greater prosociality (status), or that people are most prosocial to targets from their own social class (similarity). Across four studies, we find that participants behave less prosocially (i.e., are less socially mindful) toward higher class targets relative to lower and/or middle class targets. Perceptions of similarity, warmth, and competence did not mediate lower prosociality for higher relative to lower class targets. Together, results are most consistent with a fairness perspective. Across all studies, we also found that self social class had little to no relationship with prosociality. In total, results suggest that social class is relevant for prosocial behavior, but that target social class matters more than self social class.

© 2016 Elsevier Inc. All rights reserved.

The study of social class has traditionally been the domain of economists, political scientists, and sociologists (e.g., Bourdieu, 1979; Giddens, 2006; Savage et al., 2013). Research in this area has usually focused on perceptions of inequality, oftentimes with the explicit or implicit conclusion that class inequalities lead to undesirable outcomes at the societal level. Recently, psychologists have begun adding to this field by examining the psychology of social class in day-to-day interactions (e.g., Fiske & Markus, 2012). Within this emerging literature, class has been found to impact how people balance self- with other-interest in their social environment. For example, some findings suggest that lower class individuals are more prone to exhibit a number of prosocial behaviors relative to higher class individuals (e.g., Guinote, Cotzia, Sandhu, & Siwa, 2015; Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012; Piff, Kraus, Côté, Cheng, & Keltner, 2010; Stephens,

Markus, & Phillips, 2014). But how prosocially do people behave toward others who are perceived as lower, middle or higher class?

Although much previous research has sought to understand how self social class relates to prosociality, only a few studies provide hints at how target social class influences behavior. For example, some evidence suggests that low income, but not low socio-economic status (SES) targets are more desirable bargaining partners (Holm & Engfeld, 2005), and that powerless targets receive higher offers in an ultimatum game than targets with some power (Handgraaf, Van Dijk, Vermunt, Wilke, & De Dreu, 2008). That said, these studies have not examined how target social class per se influences prosociality. Here we adopt a more holistic approach to understanding the role of the social class of both actors within an interaction. This approach is inspired by the notion that the nature of any social interaction is influenced by characteristics of both self and other(s). Moreover, perceptions of social class are often activated through social comparisons, when people at least implicitly relate their own social class to the perceived social class of others. As we will discuss, different predictions regarding the effect of target social class

<sup>\*</sup> Corresponding author at: Vrije Universiteit Amsterdam, Department of Experimental and Applied Psychology, Van der Boerhorststraat 1, 1081 BT Amsterdam, The Netherlands. E-mail address: [n.j.van.doesum@vu.nl](mailto:n.j.van.doesum@vu.nl) (N.J. Van Doesum).

on prosociality can be derived from perspectives of fairness, status, and self-other similarity. The present research thus seeks to provide tests of these broad and distinct perspectives on how prosocially individuals treat others from different social classes.

### 1. Perceptions of social class

Notoriously difficult to pin down, social class is best approached as a multifaceted construct (e.g., Crisp & Hewstone, 2007; Savage et al., 2013). Beyond differences in economic resources, class also reflects disparities in cultural capital (Bourdieu, 1979), status, and power. Ultimately, social class is best captured under the umbrella of societal rank (Kraus, Rheinschmidt, & Piff, 2012). To address this multiplicity, researchers have developed compound measurement strategies that combine objective (e.g., income and education) with subjective (e.g., perceived relative class rank) assessments of class (e.g., Kraus & Stephens, 2012). Here we follow similar strategies.

Furthermore, interpersonal perceptions of social class are pervasive and often instantaneous. Class can be read not only from the car someone drives, the watch on the wrist, or the clothes on the body, but also from short ('thin sliced') readings of others' body language (Kraus & Keltner, 2009) and voice (Ko, Sadler, & Galinsky, 2015). Class perceptions are thus likely to help shape the interactions of everyday social life, in which people continuously encounter situations in which they have to decide how prosocially to behave.

### 2. Social mindfulness and prosociality

Like social class, prosocial behavior can be operationalized in multiple ways. It has been measured using psychological instruments such as social value orientation (SVO) (e.g., Murphy, Ackermann, & Handgraaf, 2011; Van Lange, 1999) and personality scales such as honesty-humility and agreeableness (Hilbig, Glöckner, & Zettler, 2014) and behavioral variables like charitable giving (e.g., Harbaugh, Mayr, & Burghart, 2007), volunteering (e.g., Penner, Dovidio, Piliavin, & Schroeder, 2005), and decisions in economic games and social dilemmas (e.g., Van Lange, Balliet, Parks, & Van Vugt, 2014). One recently developed approach to measuring prosociality, which we use here, is known as social mindfulness, which reflects an openness to the needs and wishes of others in the present moment (Van Lange & Van Doesum, 2015). Being socially mindful of others is manifest in simple behaviors, like leaving or limiting choice for others who also have a stake in the outcome of an interdependent situation. For example, consider choosing between a single piece of chocolate cake versus one of a few slices of cheesecake that remain on a buffet table. Your choice has implications for the next person who comes to the table. Taking the chocolate cake would give this person only one choice (cheesecake), whereas selecting a slice of cheesecake would allow the other person to choose between two distinct options (chocolate cake or cheesecake).

The social mindfulness paradigm (henceforth the SoMi paradigm) used here builds on similar choices. Like the extensively validated pen-choice task (e.g., Kim & Markus, 1999; Yamagishi, Hashimoto, & Schug, 2008) that inspired its development (Van Doesum, Van Lange, & Van Lange, 2013), the SoMi paradigm operationalizes prosocial inclinations in a manner similar to the cake example above: By providing respondents with the opportunity to leave or limit an interaction partner's options. Research suggests that social mindfulness scores are positively correlated with honesty-humility, agreeableness, SVO, empathic concern, and perspective taking, and that people construe leaving the unique item for their partner to choose from as a prosocial behavior (Van Doesum et al., 2013).

### 3. Three broad perspectives

Here we examine effects of target and participant class on prosocial behavior as measured with social mindfulness. Regarding effects of

target class, we offer three broad perspectives to guide our investigations. These yield different predictions that can be directly or indirectly tested. The three perspectives are:

- (1) *Fairness perspective*: Lower class targets should elicit greater social mindfulness as an implicit compensation for their purportedly limited access to economic and other resources. This perspective also predicts that higher social class targets should elicit limited generosity – or spite – as they can be perceived as being self-sufficient or having overbenefited from pooled resources (e.g., Adams, 1963; Tyler, 2012).
- (2) *Status perspective*: Higher class targets should be treated more respectfully, and thus more socially mindfully, perhaps because people tend to be more other-regarding to others associated with desirable qualities, even if these qualities are not linked to trust (e.g., Van Lange & Kuhlman, 1994).
- (3) *Similarity perspective*: People should be more socially mindful of others from their own ranks; that is, participant class should interact with target class. Past research has revealed that even subtle cues of similarity can trigger helping and prosociality. For example, waitresses who mimic customers' gestures tend to receive greater tips than those who do not (Van Baaren, Holland, Steenaert, & van Knippenberg, 2003). Also, similarity has been identified as a powerful mechanism in accounting for the evolution of cooperation (Fischer et al., 2013). Additionally, within-class interactions could have greater reputational consequences and greater consequences for direct reciprocity in future interactions, even when only activated as a general principle.

In addition to testing effects of target class on prosocial behavior, we also test for effects of participant class on multiple measures of prosocial behavior. Whereas recent research within the field of psychology has reported that higher class individuals tend to be less prosocial (e.g., Piff et al., 2010), research from other fields (e.g., sociology) has mainly found the opposite effect – that higher class individuals are, if anything, more prosocial (Korndörfer, Egloff, & Schmukle, 2015). Contrasting results could stem from differences in how social class and prosociality are operationalized across disciplines, and how representative samples used in different research areas are of population social class. Here, we bridge some aspects of these two approaches by measuring social class and prosociality in multiple ways, and we collect data on samples that are large by psychological standards ( $N$ s ranging from 226 to 450 across four studies,  $N_{\text{total}} = 1418$ ) and are varied in age and social class.

### 4. Guiding impressions: four studies

Like other recent studies that have tested hypotheses regarding social class (e.g., Kraus, 2015; Kraus & Tan, 2015; Piff, Stancato, Côté, Mendoza-Denton, & Keltner, 2012), we sampled U.S. residents using Amazon's Mechanical Turk service (MTurk). In many ways, participants from MTurk are more representative of the general U.S. population (e.g., in terms of age, location, education, and income) than are the student samples used in many of the key psychology studies on social class and prosociality (e.g., Guinote et al., 2015; Piff et al., 2010; see Paolacci & Chandler, 2014, and Paolacci, Chandler, & Ipeirotis, 2010, for information on MTurk participants). Further, MTurk participants appear to attend to instructions as well as student participants (Hauser & Schwarz, 2015), and to respond to experimental stimuli in ways similar to participants in research labs (Berinsky, Huber, & Lenz, 2012). Finally and, critically for the current investigation, MTurk participants are more socio-economically diverse than undergraduate samples (Casler, Bickel, & Hackett, 2013).

Literature examining effects of target characteristics on prosociality (Handgraaf et al., 2008) and effects of self social class on prosociality (e.g., Piff et al., 2010) have reported effect sizes in the medium to high

range (generally  $d_s > 0.50$ ). Based on these papers, we aimed for high (95%) statistical power to detect medium sized effects (e.g.,  $d = 0.50$ ). Accordingly, for Study 1, we terminated data collection after having collected responses from 228 participants. For Study 2, we intended to collect a larger sample both because we added one between-subjects condition, and because we wished to increase the precision of our estimate of the population effect size. We planned to enroll 300 participants in the study, and we terminated data collection after enrolling this number of participants. We further increased our target enrollment to 450 in Study 3 and 500 in Study 4, again to increase the precision of our estimate of the population effect size, and allow for mediation analyses (Study 4).

#### 4.1. Study 1: higher versus lower class targets

Our design allowed for tests of two types of relationships between class and prosociality. The first examined general prosocial tendencies by looking at personality factors and social decision making regarding general others; the second focused on an assessment of prosocial tendencies toward a specific target. In Study 1, this target was described as someone from either lower or higher social class.

##### 4.1.1. Participants

Two participants provided incomplete responses and were excluded from analyses. Hence, the sample for Study 1 consisted of 226 participants (126 females) between 18 and 78 years old,  $M_{\text{age}} = 37.44$  ( $SD = 13.63$ ). Fourteen percent held a master's degree or higher (PhD), 35% a bachelor's degree, 11% reported a technical degree, 24% had followed at least some post-secondary school, and 16% had a high school education or less.

##### 4.1.2. Social class

Following recommended procedures in this field (Kraus & Stephens, 2012), we evaluated participants' social class using both objective and subjective measures. Objective social class was assessed by annual household income, reported in \$5000 increments ranging from \$20,000 or below to \$150,000 or more ( $M_{\text{income}} = \$45,000$ –\$49,999, median = \$35,000–\$39,999). Subjective social class was established by asking participants to complete the MacArthur Scale of subjective SES (Adler, Epel, Castellazzo, & Ickovics, 2000). For this measure, participants see a picture of a ladder and are presented with the following: "For this question we would like you to think of the ladder below as representing where people stand in the United States in terms of education, income, and job status, where the people who are the worst off are on the bottom, and the people who are the best off are on the top. Where would you place yourself relative to the people who are the best off and the people who are the worst off in terms of education, income, and job status?" (9-point scale<sup>1</sup>). Although the mean was below the scale midpoint ( $M_{\text{ladder}} = 4.42$ ,  $SD = 1.73$ ,  $t(225) = -5.05$ ,  $p < 0.001$ ), 45% of the participants placed themselves on the middle rung or above. This suggests that our sample was not, as a whole, unusually high or low in social class, and that we sampled from a range of social class that was broad enough to test our hypotheses.<sup>2</sup>

##### 4.1.3. General prosociality

We assessed general prosocial tendencies in three ways: SVO (cf. Piff et al., 2010), frequency of volunteering (e.g., Penner et al., 2005), and the personality dimensions honesty-humility and agreeableness (Hilbig et al., 2014). SVO was measured using the SvoSlider (Murphy

et al., 2011), which measures degree of proself versus prosocial orientation across six items in which participants select their preference between various payoffs for self and an unspecified other.<sup>3</sup> Next, using the 36 applicable items from the HEXACO-PI-R-100 (Ashton & Lee, 2008; Ashton, Lee, & de Vries, 2014), the personality dimensions honesty-humility (16 items;  $\alpha = 0.88$ ) and agreeableness (16 items;  $\alpha = 0.91$ ) were assessed, together with an interstitial altruism facet (four items;  $\alpha = 0.70$ ). Frequency of volunteering was measured by summing participants' engagement in 11 different activities over the past year (1 = *did*, 0 = *did not*;  $\alpha = 0.76$ ), for example donating blood, coaching a sports team, or serving food.

##### 4.1.4. Social mindfulness

Social mindfulness was assessed using the dyadic SoMi paradigm (Van Doenum et al., 2013). In each of 24 trials (12 experimental and 12 control), participants were instructed to select one of three or four items that were shown onscreen, and they were instructed to do so as if they were the first of two people choosing items without replacement. Some experimental trials included one unique item and two identical items (e.g., one gold colored gift box and two red colored gift boxes), and others included one unique item and three other identical items (e.g., one green apple and three red apples). Control trials involved two versus two (when there were four items in a trial) or three identical items (when there were three items). All trials were offered in fully randomized order, with the products randomly placed on a horizontal line onscreen. Social mindfulness was calculated as the proportion of socially mindful (i.e., non-unique) choices in the experimental trials.

Whereas the identity of the other was unspecified in the preceding SVO task, participants were asked to picture making decisions with a very specific person when completing SoMi. Participants were randomly assigned to read one of two descriptions of this target. In the higher class condition, the target was described as "a man in his mid-40's. He graduated from a prestigious, highly ranked university. He has a desirable job, and he currently earns approximately \$150,000 every year. He lives in a very nice neighborhood and he drives a very nice car." In the lower class condition, the target was described as "a man in his mid-40's. He graduated from high school, but he never attended college or university. He has a job that is not very desirable, and he currently earns approximately \$40,000 every year. He lives in a neighborhood that is not very nice and he drives an old, beat up car."

##### 4.1.5. Results and discussion

Participants who imagined interacting with a lower class target scored higher on social mindfulness than those who imagined interacting with a higher class target,  $t(224) = 5.23$ ,  $p < 0.001$ ,  $d = 0.73$ ,  $M_{\text{lower}} = 0.75$  ( $SD = 0.21$ ),  $M_{\text{higher}} = 0.59$  ( $SD = 0.23$ ); see Fig. 1. This provides initial support for a fairness perspective, and it provides evidence against the status perspective; if anything, higher status led to lower social mindfulness. The tests of the interaction between target and participant class were non-significant, both when we operationalized participant class with annual income and with the social ladder variable ( $p = 0.27$  and  $p = 0.93$ , respectively).<sup>4</sup> This is inconsistent with the similarity perspective. The target effect remained after controlling for honesty-humility, agreeableness, participant social class (income and ladder), SVO, age, and sex,  $F(1, 217) = 28.72$ ,  $p < 0.001$ ,  $\eta^2 = 0.10$ .

<sup>3</sup> Due to a programming error, one of the 'other receives' numbers in item 4 of the SVO measure in Study 1 was displayed incorrectly. Three of the 226 participants selected this option. However, we chose to compute SVO for all participants using the correct number. Adopting a substitution strategy or omitting the three participants from analyses did not influence or alter the conclusions. The error was amended in Studies 2–4.

<sup>4</sup> To check if the distribution of the sample would affect tests of the similarity perspective, we subsequently added the quadratic terms of participant class to the respective models. Neither main nor interaction effects proved significant. The same was the case for Studies 2–4, and we will not further report on these analyses.

<sup>1</sup> For practical (software related) reasons, we used a 9-point scale instead of the more commonly used 10-point scale.

<sup>2</sup> Additional class evaluations like education level (participant and parent) and childhood SES were highly correlated with the main variables of social ladder and income, and showed virtually identical relationships with the prosociality variables. To avoid redundancy, these results were not reported.

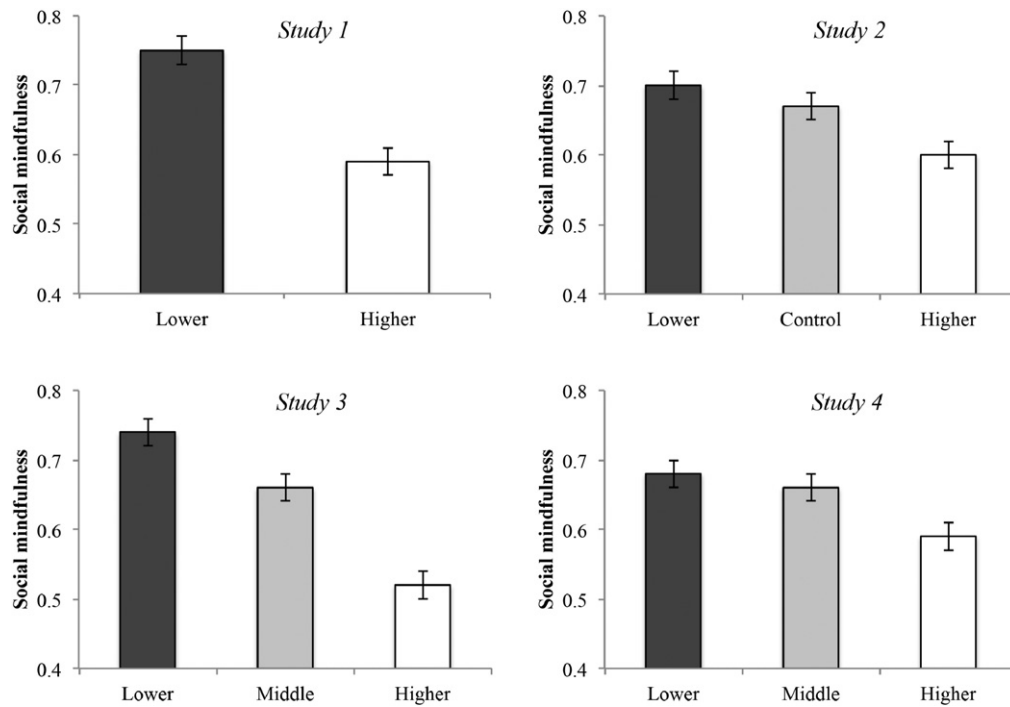


Fig. 1. Mean scores on social mindfulness per condition in Study 1–4. Error bars represent standard error.

Regarding participant social class, none of the relationships between reports of annual income or the SES-ladder and our five prosociality variables were statistically significant – only the (positive) relationship between the SES-ladder and volunteering frequency approached significance. Hence, participant social class was unrelated to prosociality across all of our measures in Study 1; see Table 1 for the bivariate correlations between participant class and prosociality.

Table 1

Bivariate correlations and 95% confidence intervals between participant class and prosociality, per study and overall (meta-analysis).

	Annual income		SES-ladder	
	<i>r</i>	95% CI	<i>r</i>	95% CI
<b>Volunteering</b>				
Study 1	0.11	[−0.02, 0.24]	0.13	[−0.00, 0.26]
Study 2	0.10	[−0.01, 0.21]	0.13	[0.02, 0.24]
Overall	0.10	[0.02, 0.19]	0.13	[0.04, 0.21]
<b>Honesty-humility</b>				
Study 1	−0.06	[−0.19, 0.07]	−0.05	[−0.18, 0.08]
Study 2	−0.01	[−0.12, 0.10]	−0.09	[−0.20, 0.02]
Overall	−0.03	[−0.12, 0.05]	−0.07	[−0.16, 0.01]
<b>Agreeableness</b>				
Study 1	−0.03	[−0.16, 0.10]	0.08	[−0.05, 0.21]
Study 2	−0.05	[−0.16, 0.06]	0.04	[−0.07, 0.15]
Overall	−0.04	[−0.13, 0.04]	0.06	[−0.03, 0.14]
<b>Social value orientation</b>				
Study 1	−0.04	[−0.17, 0.09]	0.03	[−0.10, 0.16]
Study 2	−0.09	[−0.20, 0.02]	−0.07	[−0.18, 0.04]
Study 3	−0.08	[−0.17, 0.01]	−0.05	[−0.14, 0.04]
Study 4	0.08	[−0.01, 0.17]	0.03	[−0.06, 0.12]
Overall	−0.03	[−0.11, 0.05]	−0.02	[−0.07, 0.04]
<b>Social mindfulness</b>				
Study 1	0.07	[−0.06, 0.20]	0.10	[−0.03, 0.23]
Study 2	−0.01	[−0.12, 0.10]	−0.08	[−0.19, 0.03]
Study 3	−0.02	[−0.11, 0.07]	−0.01	[−0.10, 0.08]
Study 4	0.07	[−0.02, 0.16]	0.03	[−0.06, 0.12]
Overall	0.01	[−0.05, 0.08]	−0.01	[−0.06, 0.07]

Note. Participant class as measured via annual income and social class ladder, and prosociality as measured by volunteering, honesty-humility, agreeableness, social value orientation, and social mindfulness.

#### 4.2. Study 2: reward or reprove?

Study 1 involved lower versus higher social class targets, and participants were less socially mindful of a higher class target than of a lower class target. Although it provided initial evidence for the influence of target social class on prosociality, this design did not allow us to test whether participants were more prosocial toward the lower class target, or rather less prosocial toward the higher class target relative to a class unspecified target. To address this shortcoming, we added a control condition in which we did not specify the target's social class to the Study 2 design. Further, we added questions that could inform why participants might treat the low class target more prosocially than the high class target. To do so, we included several questions regarding judgments of the interaction partner. Critically for the similarity perspective, one of these judgments directly concerned similarity.

##### 4.2.1. Participants

For Study 2, we collected a sample of 300 participants (162 women) between the ages of 19 and 73,  $M_{age} = 36.72$  ( $SD = 12.64$ ). The distribution in educational background was similar to Study 1.

##### 4.2.2. Social class and general prosociality

Measures of social class and general prosociality were identical to Study 1. For objective social class, participants reported their annual household income using the same scale as in Study 1. The mean for this sample was between \$45,000–49,999, with a median of \$40,000–44,999. Subjective social class was again measured using the 9-point SES-ladder (Adler et al., 2000), with a distribution similar to that in Study 1 ( $M_{ladder} = 4.58$ ,  $SD = 1.67$ , 50% of participants at the middle rung or above). We again included SVO, personality (honesty-humility,  $\alpha = 0.87$ , and agreeableness,  $\alpha = 0.89$ ), and volunteering ( $\alpha = 0.79$ ) as measures of general prosociality.

##### 4.2.3. Social mindfulness

Across three conditions, participants were randomly assigned to imagine a SoMi partner whose class was either not described (control) or was described as lower class or higher class. The control condition



introduced this target as “a man in his mid-40’s. His name is John. He is about 5’9”, weighs about 195 lb, and he has dark hair and brown eyes.” No further information was provided in the control condition. The lower and higher class conditions included the same information as described in Study 1.

As a manipulation check, we asked participants to place John on the same 9-point social class ladder they had previously used to report their own class. Additionally, we asked participants to provide a set of social judgments regarding the target. Specifically, we assessed similarity to the target using two items: “How similar to John (or someone like him) do you think you are?” and “How dissimilar to John (or someone like him) do you think you are?” ( $r = 0.62$ ), which we combined into a single scale for perceived similarity. Other items assessed liking (“How much do you like John [or someone like him]?”), compassion (“How much compassion do you feel for John [or someone like him]?”), wish to affiliate (“How much would you like to spend time with John [or someone like him]?”), willingness to provide resources (“How willing do you think John is [or someone like him] to provide resources to others?”), ability to provide resources (“How able do you think John is [or someone like him] to provide resources to others?”), and deservedness (“How much do you think that John deserves [or people like him deserve] some good things in life?”), all on a 7-point scale from *not at all* – *very much*.

#### 4.2.4. Results

The manipulation check confirmed that, relative to the control condition ( $M_{\text{control}} = 4.96$ ,  $SD = 1.31$ ), participants estimated John’s position as higher in the higher class condition ( $M_{\text{higher}} = 6.91$ ,  $SD = 1.32$ ),  $t(297) = 10.89$ ,  $p < 0.001$ ,  $d = 1.49$ , and lower in the lower class condition ( $M_{\text{lower}} = 3.80$ ,  $SD = 1.21$ ),  $t(297) = 6.33$ ,  $p < 0.001$ ,  $d = 0.92$ . Note that the target in the control condition was perceived as middle class. There were clear differences in target perception; means, standard deviations, and differences in social judgment per condition are summarized in Table 2. In line with previous research on social mindfulness showing that people are more socially mindful of friends, teammates (Van Doesum, Van Prooijen, Verburgh, & Van Lange, 2016), or people they think are trustworthy (Van Doesum et al., 2013), we observed small correlations between social mindfulness and liking ( $r = 0.12$ ,  $p = 0.044$ ), compassion ( $r = 0.12$ ,  $p = 0.037$ ), and willingness ( $r = 0.13$ ,  $p = 0.031$ ) and ability to provide resources ( $r = -0.13$ ,  $p = 0.026$ ). Correlations between social mindfulness and similarity ( $r = 0.10$ ,  $p = 0.099$ ), wish to affiliate ( $r = 0.05$ ,  $p = 0.426$ ), and deservedness ( $r = 0.09$ ,  $p = 0.120$ ) were non-significant, though similar in magnitude.

Like in Study 1, social mindfulness varied across target descriptions,  $F(2, 297) = 3.75$ ,  $p = 0.025$ ,  $\eta^2 = 0.03$ . Participants behaved less socially mindfully when imagining a higher versus a lower social class target,  $M_{\text{higher}} = 0.60$  ( $SD = 0.22$ ),  $M_{\text{lower}} = 0.70$  ( $SD = 0.25$ ),  $t(297) = 2.66$ ,  $p = 0.008$ ,  $d = 0.43$ . The lower class condition did not differ significantly from control,  $M_{\text{control}} = 0.67$  ( $SD = 0.27$ ),  $t(297) = 0.81$ ,  $p = 0.416$ ,  $d = 0.12$ ; the higher class condition did so marginally,  $t(297) = 1.86$ ,  $p = 0.064$ ,  $d = 0.29$ . See Fig. 1 for a visualization. Tests of the interaction between participant and target social class on social mindfulness were non-significant regardless of whether participant income or social ladder were used to operationalize participant class ( $p = 0.47$  and  $p = 0.80$ , respectively). Like before, the effect of target social class remained after controlling for honesty-humility, agreeableness, participant social class (income and SES-ladder), SVO, age, and sex,  $F(2, 290) = 4.12$ ,  $p = 0.017$ ,  $\eta^2 = 0.03$ .

Consistent with results from Study 1, participant social class was largely independent of their prosociality across our measures. None of the relationships between reports of annual income and our five prosociality variables were statistically significant. Only one bivariate relationship between the SES-ladder and prosociality (volunteer frequency) was statistically significant. Similar to Study 1, this was in the opposite direction of that suggested by previous psychological research (Piff et al., 2010) but consistent with sociology research (e.g., Ramirez-

**Table 2**

Means and standard deviations of social judgments, manipulation checks and mediators per condition in Studies 2–4.

Study 2						
Social judgments	Lower		Control		Higher	
	M	SD	M	SD	M	SD
Similarity	4.16 <sup>a</sup>	1.34	4.08 <sup>a</sup>	1.34	3.26 <sup>b</sup>	1.39
Liking	4.55 <sup>a</sup>	1.11	4.47 <sup>a</sup>	1.10	4.06 <sup>b</sup>	1.18
Wish to affiliate	3.99 <sup>a,b</sup>	1.34	4.08 <sup>a</sup>	1.42	3.63 <sup>b</sup>	1.40
Compassion	4.83 <sup>a</sup>	1.39	4.54 <sup>a</sup>	1.37	3.70 <sup>b</sup>	1.58
Willing to provide	4.25 <sup>a</sup>	1.18	4.61 <sup>b</sup>	1.15	3.98 <sup>a</sup>	1.31
Able to provide	3.63 <sup>a</sup>	1.20	4.74 <sup>b</sup>	1.10	5.78 <sup>c</sup>	1.10
Deservedness	5.43 <sup>a</sup>	1.25	5.36 <sup>a</sup>	1.35	4.64 <sup>b</sup>	1.25
Study 3						
Manipulation checks	Lower		Middle		Higher	
	M	SD	M	SD	M	SD
Neighborhood	1.93 <sup>a</sup>	0.66	3.28 <sup>b</sup>	0.50	4.62 <sup>c</sup>	0.64
Car	1.79 <sup>a</sup>	0.75	3.26 <sup>b</sup>	0.60	4.52 <sup>c</sup>	0.66
Education	1.95 <sup>a</sup>	0.55	2.91 <sup>b</sup>	0.41	3.68 <sup>c</sup>	0.51
University	2.94 <sup>a</sup>	0.24	3.10 <sup>a</sup>	0.52	4.25 <sup>b</sup>	0.67
Job desirability	1.80 <sup>a</sup>	0.72	3.08 <sup>b</sup>	0.55	4.05 <sup>c</sup>	0.91
Employed <sup>1</sup>	88.70 <sup>a</sup>		99.30 <sup>b</sup>		98.70 <sup>b</sup>	
Income <sup>2</sup>	20–25 <sup>a</sup>		50–55 <sup>b</sup>		130–135 <sup>c</sup>	
Study 4						
Mediators	Lower		Middle		Higher	
	M	SD	M	SD	M	SD
Warmth	4.56 <sup>a</sup>	1.03	4.99 <sup>b</sup>	1.09	4.46 <sup>a</sup>	1.09
Competence	3.68 <sup>a</sup>	1.12	4.98 <sup>b</sup>	1.03	5.73 <sup>c</sup>	0.92
Similarity	2.24 <sup>a</sup>	1.45	3.18 <sup>b</sup>	1.47	2.30 <sup>a</sup>	1.63
Manipulation checks						
Neighborhood	2.00 <sup>a</sup>	0.63	3.18 <sup>b</sup>	0.49	4.66 <sup>c</sup>	0.54
Car	1.72 <sup>a</sup>	0.68	3.18 <sup>b</sup>	0.59	4.66 <sup>c</sup>	0.52
Education	1.92 <sup>a</sup>	0.51	2.92 <sup>b</sup>	0.44	3.71 <sup>c</sup>	0.47
University	2.91 <sup>a</sup>	0.70	3.00 <sup>a</sup>	0.53	4.25 <sup>b</sup>	0.58
Job desirability	1.77 <sup>a</sup>	0.70	2.93 <sup>b</sup>	0.59	4.10 <sup>c</sup>	0.86
Employed <sup>1</sup>	75.15 <sup>a</sup>		99.24 <sup>b</sup>		99.32 <sup>b</sup>	
Income <sup>2</sup>	20–25 <sup>a</sup>		50–55 <sup>b</sup>		135–140 <sup>c</sup>	

Note. Means with different superscripts per row are statistically different.

<sup>1</sup> Percentage of participants who estimated John to be employed.

<sup>2</sup> Income = × \$1000.

Valles, 2006); that is, higher social class was associated with higher frequencies of volunteering; see Table 1.

**4.2.4.1. Mediating effects of target perceptions.** Our measure of perceived similarity allowed for a direct test of the similarity perspective. Additionally, the assessment of the target deserving “some good things in life” is conceptually related to the fairness perspective – although not entirely overlapping. Accordingly, we tested whether differences in perceived target similarity and deservedness mediated effects of target class on prosociality. Following Hayes and Preacher (2014), we computed two dummy coded variables, with high class as the reference group. This allowed us to test mediating effects of perceived similarity and deservedness on the difference between high and low class targets, and between high class and control (i.e., middle class) targets.

Using the SPSS PROCESS Macro (Hayes, 2013), we first tested whether perceived similarity and deservedness mediated the observed lower prosociality toward high class relative to low class targets. The 95% confidence interval for the total indirect effect overlapped with zero [−0.008, 0.040], as did the 95% confidence intervals for similarity and deservedness. Thus, neither perceived similarity nor deservedness mediated the difference between high and low class targets. Next, we tested whether the same variables mediated the observed lower prosociality toward high class relative to middle class (control) targets. Again, the 95% confidence interval for the total indirect effect

overlapped with zero [−0.007, 0.039], as did the 95% confidence intervals for similarity and deservedness. Hence, results were not consistent with similarity or fairness perspectives.

#### 4.2.5. Discussion

With the control condition seen as baseline, the pattern of results suggests that possible fairness motives did not lead to more prosociality regarding the lower class target, but rather to less prosociality vis-à-vis the higher class target. Related to fairness, however, our findings on prosociality could not be explained by a general sense of a target who is more deserving of the good things in life. From a status perspective, the same pattern suggests that higher status targets actually elicited lower prosociality, identical to what was found in Study 1. Because perceived similarity did not mediate the effects of target social class on prosociality, the similarity perspective was not supported.

### 4.3. Study 3: adding middle class

In Study 3, we addressed two limitations of Studies 1 and 2. First, neither Study 1 nor Study 2 tested directly how prosociality toward lower and higher class targets differs from prosociality toward middle class targets. In Study 3, then, we replaced the class unspecified condition from Study 2 with middle class as comparison. Second, in Studies 1 and 2, social class was communicated with information regarding income possessions, and prestige in job and education. Although our manipulation check suggested that our global descriptions indeed communicated class in the intended manner, facets of the descriptions (e.g., income) might have influenced prosociality in manners independent from social class. To address this limitation, we manipulated target social class by providing participants with only their target's position on the social class ladder (i.e., lower, middle, or higher).

#### 4.3.1. Participants

Our sample for Study 3 consisted of 450 (238 male) participants between the ages of 18 and 77,  $M_{\text{age}} = 34.54$  ( $SD = 11.49$ ).

#### 4.3.2. Social class and prosociality

In this sample, the mean reported annual household income as reported in \$5000 increments, here starting from below \$10,000 and ending at \$200,000 and above, was between \$45,000–49,999, with the median between \$35,000–39,999. Similar to Studies 1 and 2, the self-reported mean position on the SES-ladder was 4.53 ( $SD = 1.63$ ), with approximately half of the participants (49%) on the middle rung or above. We limited our measures of prosociality to SVO (target-unspecified) and social mindfulness (target-specific).

#### 4.3.3. Social mindfulness

Next to his age, weight, height, and eye and hair color (see Study 2), the target in the SoMi paradigm (“John”) was only described based on his position on the SES-ladder. Participants were randomly assigned to one of three conditions. In the lower class condition, John was “at the second lowest position on the ladder when it comes to education, income, and job status relative to people in the United States.” John was described as being in “the middle position” or in the “second highest position” in the middle and higher class conditions, respectively. These descriptions were complemented by a picture of the ladder indicating the corresponding position. Participants then estimated the target's household income, employment (yes/no, and if yes, desirability of the job), education level (college degree yes/no, and if yes, prestige of the university), the car he drives (*old and beat up – new and fancy*), and the neighborhood he lives in (*not so nice – very nice*). These items were included as manipulation checks.<sup>5</sup>

<sup>5</sup> To check for salience effects, manipulation checks were administered either immediately before or immediately after completing the SoMi task. This procedure did not moderate the effect of target social class.

### 4.3.4. Results and discussion

Estimates of income, employment, education, and car and neighborhood quality suggested that our manipulation indeed conveyed the target's social class in the intended manner (Table 2). Consistent with Studies 1 and 2, participants behaved less prosocially when imagining a higher class target relative to middle or lower class targets, and they behaved more prosocially when imagining a lower class target than when imagining a middle or higher class target,  $M_{\text{lower}} = 0.74$  ( $SD = 0.24$ ),  $M_{\text{middle}} = 0.66$  ( $SD = 0.25$ ),  $M_{\text{higher}} = 0.52$  ( $SD = 0.27$ );  $F(2, 447) = 28.11$ ,  $p < 0.001$ ,  $\eta^2 = 0.11$ . All differences were significant:  $t(447) = 2.95$ ,  $p = 0.003$ ,  $d = 0.33$ , for lower versus middle class targets;  $t(447) = 7.45$ ,  $p < 0.001$ ,  $d = 0.86$ , for lower versus higher class targets; and  $t(447) = 4.51$ ,  $p < 0.001$ ,  $d = 0.54$ , for middle versus higher class targets (see Fig. 1).

These results support a fairness perspective in the sense that lower class targets were treated more prosocially than both other classes, and higher class targets were treated less prosocially than both other classes. A status perspective was not supported, as higher status once more elicited lower prosociality. Results were also again inconsistent with a similarity hypothesis: We found no significant interaction between participant (income or ladder) and target class on social mindfulness ( $p = 0.34$  and  $p = 0.54$ , respectively). Effects of target class held when controlling for participant social class (income and ladder), SVO, age, and sex,  $F(2, 441) = 10.46$ ,  $p < 0.001$ ,  $\eta^2 = 0.04$ . Finally, for a third consecutive study, we observed no relationship between participant social class and prosociality as measured in SVO and social mindfulness (Table 1).

### 4.4. Study 4: mediation by stereotype content?

Given the limited descriptions of the targets provided to participants, any effects of our manipulations presumably operated through stereotypes of high versus low class individuals. After all, social stereotypes are prone to guide interpersonal behavior, especially under low information conditions (cf. Snyder, Tanke, & Berscheid, 1977). Study 2 provided an initial attempt at elucidating the stereotypes that might underlie effects of target class on prosociality. However, the target assessments did not directly address the two fundamental dimensions presumed to underlie stereotype content: Warmth and competence (e.g., Cuddy, Fiske, & Glick, 2007, 2008; Fiske, 2015). In Study 4, we tested whether perceptions of warmth and competence mediate effects of target class on prosociality. We also further tested a similarity perspective by examining whether perceptions of similarity to the target mediated any effect of target social class. Finally, perceptions of social class can be linked to other categories that may guide prosociality. In particular, class is often confounded with race in the U.S.; perhaps this made higher class targets more likely to be construed as White than lower class targets. Given that the lower class target thus could have been perceived as different from the higher class target in both race and class, we additionally specified the target as White across conditions.

#### 4.4.1. Participants

Five hundred and six participants completed the questionnaire for Study 4. Whereas Study 3 included estimated income as a manipulation check, Study 4 added a manipulation check that could be used as an attentional screen. That is, at the end of the study we asked participants to confirm their target's position on the SES-ladder. For participants who passed the manipulation check ( $N = 442$ ), the target class manipulation was associated with large differences in estimated target income,  $F(2, 439) = 481.25$ ,  $p < 0.001$ ,  $\eta^2 = 0.69$ . There was no effect of target manipulation for participants who failed this manipulation check ( $N = 64$ ),  $F(2, 61) = 1.46$ ,  $p = 0.239$ ,  $\eta^2 = 0.05$ . We report results using only those participants who passed the manipulation check. Our sample

for Study 4 thus consisted of 442 (212 female) participants between the ages of 19 and 74,  $M_{\text{age}} = 35.43$  ( $SD = 11.50$ ).<sup>6</sup>

#### 4.4.2. Social class and prosociality

Mean reported participant annual household income was between \$50,000–54,999, with the median between \$45,000–49,999. The self-reported mean position on the SES-ladder was 4.45 ( $SD = 1.53$ ), with 47% of the participants on the middle rung or above. As in Study 3, we limited our measures of prosociality to SVO (target-unspecified) and social mindfulness (target-specific).

#### 4.4.3. Study protocol

The study protocol for Study 4 was identical to that from Study 3, with two important exceptions. First, John (the target) was described as being White. Second, between the class manipulation and the SoMi task, participants rated John on six warmth related traits (friendly, well-intentioned, trustworthy, warm, good-natured, and sincere;  $\alpha = 0.95$ ) and six competence related traits (competent, confident, capable, efficient, intelligent, and skillful;  $\alpha = 0.96$ ) (Fiske, Cuddy, Glick, & Xu, 2002). As in Study 2, participants also rated their similarity to John (“How similar to John do you picture yourself to be?”). All items were answered on a 7-point scale ranging from 0 = *not at all* to 6 = *extremely*. After completing the SoMi task, participants estimated John's household income, employment, education level, car quality, and neighborhood, using the same items as in Study 3.

#### 4.4.4. Results

Estimates of John's income, employment, education, and car and neighborhood quality suggested that our procedure conveyed the target's social class in the intended manner (Table 2). Consistent with the previous three studies, participants behaved less prosocially when picturing a high class target ( $M_{\text{high}} = 0.59$ ,  $SD = 0.27$ ) relative to middle ( $M_{\text{middle}} = 0.66$ ,  $SD = 0.26$ ) or low class targets ( $M_{\text{low}} = 0.68$ ,  $SD = 0.25$ ),  $F(2, 439) = 5.11$ ,  $p = 0.006$ ,  $\eta^2 = 0.02$ . Whereas prosociality was lower for higher class targets relative to lower class targets,  $t(439) = 3.05$ ,  $p = 0.002$ ,  $d = 0.35$ , and middle class targets,  $t(439) = 2.35$ ,  $p = 0.019$ ,  $d = 0.27$ , prosociality toward lower and middle class targets did not differ,  $t(439) = 0.55$ ,  $p = 0.583$ ,  $d = 0.08$ ; see Fig. 1. As in the previous three studies, effects of target class held when controlling for participant class (income and ladder), SVO, age, and sex,  $F(2, 432) = 4.12$ ,  $p = 0.017$ ,  $\eta^2 = 0.02$ . Further, we again observed no relationship between participant class and prosociality, as measured by SVO and social mindfulness (Table 1) and we again failed to detect an interaction between participant class (income or ladder) and target class on social mindfulness ( $p = 0.84$  and  $p = 0.98$ , respectively).

**4.4.4.1. Mediating effects of target perceptions.** Overall, warmth and similarity ratings were positively related to social mindfulness ( $r = 0.17$ ,  $p < 0.001$ , and  $r = 0.14$ ,  $p = 0.004$ , respectively), while competence showed no relationship to social mindfulness ( $r = -0.04$ ,  $p = 0.469$ ). Perceptions of target warmth, competence, and similarity varied across conditions (all  $p$ 's  $< 0.001$ ). In line with the fact that participants, on average, reported themselves around the mean of the status ladder, perceptions of similarity were highest for middle class targets, with no difference between low and high class targets. Similarly, perceptions of warmth were higher for middle class targets than for high or low class targets. In contrast, perceived competence was highest for high class targets and lowest for low class targets (Table 2). We proceeded to test whether these differences in target perception mediated target class effects on prosociality. Identical to Study 2, we computed two dummy coded variables, with high class as the reference group. This allowed us to test mediating effects of perceived similarity, warmth,

and competence on the difference between high and low class targets, and between high and middle class targets.

Using the SPSS PROCESS Macro (Hayes, 2013), we first tested whether perceived warmth, competence, and similarity mediated the observed lower prosociality toward high class relative to low class targets. The 95% confidence interval for the total indirect effect overlapped with zero [−0.021, 0.114]. Hence, we found no evidence that the target perceptions measured in this study mediated the difference between high and low class targets. Next, we tested whether the same variables mediated the observed lower prosociality toward high class relative to middle class targets. Here, we found that the 95% confidence interval for the total indirect effect did not overlap with zero [0.011, 0.093]. Only the 95% confidence interval for the indirect effect via warmth failed to overlap with zero [0.006, 0.049]. Together, results only suggest mediation via perceived warmth when differentiating between high and middle class targets; see Table 3.

#### 4.4.5. Discussion

We observed the same general pattern as in Studies 1–3, with participants behaving the least prosocially when picturing a higher class target. Further, methods from Study 4 allowed us to rule out potentially confounding effects of perceived target race, since we specified the target as a white male across conditions. Study 4 also allowed us to reject and retain some hypotheses regarding why higher class targets elicited lower prosociality. Non-significant interactions between participant class and target class observed in Studies 1–3 (replicated in Study 4) and no mediating effects in Study 2 already spoke against the possibility that perceived similarity drove the effects of target class; the failure to find any indirect effect of rated similarity in the comparison of Study 4 strongly suggests that these effects indeed cannot be attributed to perceived similarity. We further found that decreased prosociality toward higher class targets was not driven by differences in perceived competence between the class groups. Results regarding perceptions of warmth were mixed: Warmth mediated lower prosociality toward higher class relative to middle class targets, but failed to mediate a similar effect for higher class relative to lower class targets. Hence, results speak against the idea that the observed effects of target class on prosociality are entirely driven by perceptions of warmth.

#### 4.5. Meta-analysis

To estimate the overall effect sizes of participant and target class on prosociality, we used Comprehensive Meta-Analysis software to meta-analyze results from Studies 1–4. We report results of random effects models. First, we estimated the overall effect size of prosociality toward high versus low class targets, high versus middle class targets, and low

**Table 3**  
Total, direct, and indirect effects of dummy variables per indicator in Study 4.

	Effect	SE	LLCI	ULCI
<i>Lower-Higher</i>				
Total	0.090	0.030	0.032	0.148
Direct	0.045	0.045	−0.044	0.133
Total indirect	0.045	0.035	−0.021	0.114
Similarity	−0.001	0.003	−0.011	0.003
Warmth	0.004	0.006	−0.005	0.018
Competence	0.042	0.033	−0.021	0.108
<i>Middle-Higher</i>				
Total	0.073	0.031	0.012	0.135
Direct	0.024	0.037	−0.048	0.096
Total indirect	0.049	0.021	0.011	0.093
Similarity	0.011	0.010	−0.006	0.032
Warmth	0.023	0.011	0.006	0.049
Competence	0.015	0.012	−0.008	0.042

Note. Lower-Higher indicates the contrast between lower class targets and higher class targets. Middle-Higher indicates the contrast between middle class targets and higher class targets.

<sup>6</sup> However, analyses using the full sample did not alter the conclusions.



versus middle class targets. The comparison between high and low class targets was performed across all four studies, while comparisons that included middle class were based on Studies 2–4 (in the control condition of Study 2, participants generally estimated this target to be middle class). We found an effect size of  $d = 0.57$ ,  $CI_{95\%} [0.30, 0.85]$  when comparing prosociality toward high versus low class targets,  $d = 0.37$ ,  $CI_{95\%} [0.19, 0.55]$  when comparing high versus middle class targets, and  $d = 0.17$ ,  $CI_{95\%} [0.01, 0.34]$  when comparing prosociality toward low versus middle class targets. Hence, the strongest effect on prosocial tendencies was found between high and low class targets.

Next, we examined the bivariate correlations between participant class (two measures) and prosociality (five measures). In line with Korndörfer et al. (2015), we found little evidence for a relationship between participant class and prosociality. The only correlation that proved significant suggested more volunteering activities for higher class individuals; see Table 1.

## 5. General discussion

Across four experiments, participants behaved less prosocially toward higher social class targets than toward lower, middle, or classwise unspecified targets. This effect occurred regardless of participant social class. Perceived warmth, competence, or similarity did not mediate differences in prosociality toward higher and lower class targets; warmth only played a role between middle and higher class targets. Also, in contrast with some findings (Piff et al., 2010), but consistent with others (Korndörfer et al., 2015), participant class showed no negative relationship with other measures of prosociality. Together, these results suggest that social class is indeed relevant to prosociality, but that target social class influences prosociality more than self social class.

From the outset, we advanced three broad perspectives as a guide to explain how target social class might influence prosocial behavior: Fairness, status, and similarity. We did not find conclusive evidence, however, with most – but mixed – confirmation of the fairness perspective: Participants behaved less prosocially toward higher class targets relative to lower or middle class targets across four studies, and more prosocially toward lower class targets relative to middle class targets in Study 3. We observed no evidence in support of the status perspective; indeed, results were in the opposite direction of what this perspective implied. Results of Study 2 (including a class unspecified target who was perceived as middle class) and Study 4 (including a middle class target) suggest that class perceptions indeed led to *decreased* social mindfulness toward higher class targets rather than *increased* social mindfulness to lower class targets. Finally, we consistently found no evidence for a similarity perspective explaining target class effects on prosociality. Further, participants rated themselves as more similar to a middle class target than to a low class target in Study 4, yet behaved no more prosocially to a middle class target than to a low class target. And although participants behaved more prosocially toward a middle class target than toward a high class target, perceived similarity did not mediate this difference.

We can offer a few initial thoughts on why the higher class target was treated less prosocially across all four studies. People may perceive higher social class individuals as having unfair advantages in life or being snobbish and narcissistic (cf. Piff, 2014). Furthermore, the expected socially independent (e.g., Kraus, Piff et al., 2012; Stephens et al., 2014) or even unethical attitudes of higher social class individuals (e.g., Dubois, Rucker, & Galinsky, 2015; Piff et al., 2012) could have repercussions for how prosocially they are treated. Even if such expectations would not be entirely accurate, or derived from (fallible) stereotypes (e.g., Fiske, 2015; Fiske et al., 2002; Wigboldus, Dijksterhuis, & Van Knippenberg, 2003), lack of expected reciprocity (even when hypothetical) still may have led people to take a less prosocial stance toward individuals of higher social class in general. The decreased liking, wish to affiliate, compassion, and deservedness we found in Study 2 concerning the high class target certainly point in that direction, although the latter

variable failed to show a mediating effect. In addition, less perceived warmth did lead to lower prosociality when comparing middle and high class targets in Study 4. In brief, spite or even social hostility (Van Doesum et al., 2016; Van Lange & Van Doesum, 2015) regarding higher classes may be part of the underlying motivational complex.

However, fairness motivations that favor lower class targets did receive some support as well, even though higher prosociality to lower class targets relative to middle class targets was only observed in Study 3, accompanied by a similar but non-significant trend in Study 4. The low-cost prosociality that is offered in social mindfulness can easily be employed as compensation for the purportedly limited access to economic and other resources that lower class others have; or conversely can be withheld from higher class others because they may not need it. It is also possible that perceived fairness takes the form of coming to view the higher social classes as less warm than middle social classes, a mediating process (Study 4) that helps explain low levels of social mindfulness for the high class targets. Future research could look more closely at what is ultimately underlying such tendencies, especially the decreased social mindfulness when others are from high social class.

### 5.1. Self social class and prosociality

In none of our studies did we observe the negative relationships between social class and prosociality that have been reported in previous psychological research (e.g., Guinote et al., 2015; Piff et al., 2010). Instead, correlations between participant class and prosociality were close to zero within individual studies. A meta-analysis on the four studies (see Table 1) provided no evidence in support of a negative effect of class on prosociality; in contrast with findings reported in previous research (e.g., Piff et al., 2010), people from lower social classes did not appear to be more prosocial than people from higher social classes. Across the two measures of social class and five measures of prosociality, there was one significant effect that showed the reverse: Higher social class individuals reported volunteering more than lower social class individuals, which is consistent with recent sociological findings (Korndörfer et al., 2015). Indeed, Korndörfer et al. critique psychological research on class, partially based on the relatively small sample sizes of the studies in which a negativity effect of class was found; our use of substantially larger samples may answer to this issue. And where Korndörfer et al. (2015) mainly drew on publicly available large databases that were set up for general (sociological and/or demographical) purposes, our experiments might furthermore help draw the discussion back to experimental psychology by employing widely used psychological measures like social value orientation (e.g., Murphy & Ackermann, 2014; Van Lange, 1999) and prosocial personality scales (cf. Hilbig et al., 2014), combined with the recently introduced and validated measure of social mindfulness (e.g., Van Doesum et al., 2013). Naturally, further research is necessary to hone in on which aspects of social behavior do (or do not) relate to self social class, including prosociality, narcissism, unethical behavior, compassion, and compliance (e.g., Dubois et al., 2015; Piff, 2014; Piff et al., 2012; Stellar, Manzo, Kraus, & Keltner, 2012).

### 5.2. Limitations

Undeniably, limitations apply. Participants in our studies were interacting with hypothetical targets, without expecting to make acquaintance or have further interactions. Although this is standard procedure in many studies on prosociality and cooperation (see, for example, Van Lange et al., 2014), and, indeed, on several studies on social class or social identification and prosociality (e.g., Fowler & Kam, 2007; Hoffman, McCabe, & Smith, 1996; Piff et al., 2010), inferences using such a method might not always apply to real behavioral interactions. That said, substantial overlap in neural activity has been found between making hypothetical and real choices (Kang, Rangel, Camus, & Camerer, 2011), and methods rooted in game theory predict real-life



prosocial behavior (e.g., Van Lange, Bekkers, Schuyt, & Van Vugt, 2007). Regardless, future research could use behavioral measures and/or settings in which participants are truly interdependent. The latter might invoke status or reciprocity considerations to a larger extent than the current approach and, hence, could yield different results (e.g., greater prosociality toward higher class targets).

Furthermore, the target was described as a man in his mid-40s across all four studies, in Study 4 further specified as being White. Future research may inform whether variations in sex, age, or specific ethnicity would produce different results (cf. Crisp & Hewstone, 2007). With regards to our use of MTurk samples, task habituation among participants is a realistic risk when using this platform (Rand et al., 2014). However, because of the recent introduction of our dependent variable, social mindfulness, habituation is unlikely to have impacted our findings. A word of caution applies to the variance in social class within our samples. Although we sampled from a wide range of social classes (again, likely wider than what is sampled from in studies using undergraduate students), we did not sample from the super-rich (who are unlikely to participate in MTurk studies) or the super-poor (who might not have access to computers). Future research could examine how social class relates to prosociality among these more extreme income strata.

And finally, our samples are limited to the United States, and our data do not speak to the cross-cultural generalizability of our findings. Certain aspects of North American culture could have influenced reactions toward high class targets. For example, the U.S. is currently one of the most divided nations in the world when it comes to income and wealth (Piketty & Saez, 2014). At the same time, U.S. citizens often desire a more equal distribution of wealth across political orientations (Norton & Ariely, 2011), preferably achieved by leveling at the top of the income distribution (Osberg & Smeeding, 2006). It is possible that felt discrepancies between ideal and observed reality make social class disparities more salient within the U.S. than within nations where wealth is more equally distributed.

## 6. Concluding remarks

Class impressions matter. People seem far less interested in minding the interests of higher social class individuals than in minding the interests of individuals from other classes or a control condition. Impressions of social class are quickly formed, and, as we have shown, targeting individuals from higher social class can drive people to be less socially mindful of their target's needs and wishes, maybe even going so far as to portray social hostility. These effects could be partly accounted for by fairness translated as the wish to equalize those from higher social class to the average, and not directly by status motivations or perceived similarity. Although we most often meet those who are like us, we are bound to interact with a broad spectrum of classes. Hence, this understudied domain of impressions must serve as an important guide to human thought and action – perhaps even more than people would like to believe.

## Acknowledgements

The research was supported by the Netherlands Organization for Scientific Research (NWO) grant number 022.003.040, awarded to the Kurt Lewin Institute, with Paul Van Lange as the applicant representing the Department of Experimental and Applied Psychology at the Vrije Universiteit Amsterdam, The Netherlands. We thank Michael Kraus and Paul Piff for their comments on an earlier version of this manuscript.

## References

Adams, J. S. (1963). Towards an understanding of inequity. *The Journal of Abnormal and Social Psychology, 67*, 422–436. <http://dx.doi.org/10.1037/h0040968>.

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning:

Preliminary data in healthy white women. *Health Psychology, 19*, 586–592. <http://dx.doi.org/10.1037/0278-6133.19.6.586>.

Ashton, M. C., & Lee, K. (2008). The prediction of honesty-humility-related criteria by the HEXACO and five-factor models of personality. *Journal of Research in Personality, 42*, 1216–1228. <http://dx.doi.org/10.1016/j.jrp.2008.03.006>.

Ashton, M. C., Lee, K., & de Vries, R. E. (2014). The HEXACO honesty-humility, agreeableness, and emotionality factors: A review of research and theory. *Personality and Social Psychology Review, 18*, 139–152. <http://dx.doi.org/10.1177/1088868314523838>.

Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis, 20*, 351–368. <http://dx.doi.org/10.1093/pan/mpr057>.

Bourdieu, P. (1979). *La distinction. Critique sociale du jugement [Distinction. A social critique of the judgment of taste]*. Paris: Les éditions du Minuit.

Casler, K., Bickel, L., & Hackett, E. (2013). Separate but equal? A comparison of participants and data gathered via Amazon's MTurk, social media, and face-to-face behavioral testing. *Computers in Human Behavior, 29*, 2156–2160. <http://dx.doi.org/10.1016/j.chb.2013.05.009>.

Crisp, R. J., & Hewstone, M. (2007). Multiple social categorization. *Advances in Experimental Social Psychology, 39*, 163–254. [http://dx.doi.org/10.1016/S0065-2601\(06\)39004-1](http://dx.doi.org/10.1016/S0065-2601(06)39004-1).

Cuddy, A. J., Fiske, S. T., & Glick, P. (2007). The BIAS map: Behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology, 92*, 631–648. <http://dx.doi.org/10.1037/0022-3514.92.4.631>.

Cuddy, A. J., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. *Advances in Experimental Social Psychology, 40*, 61–149. [http://dx.doi.org/10.1016/S0065-2601\(07\)00002-0](http://dx.doi.org/10.1016/S0065-2601(07)00002-0).

Dubois, D., Rucker, D. D., & Galinsky, A. D. (2015). Social class, power, and selfishness: When and why upper and lower class individuals behave unethically. *Journal of Personality and Social Psychology, 108*, 436–449. <http://dx.doi.org/10.1037/pspi0000008>.

Fischer, I., Frid, A., Goerg, S. J., Levin, S. A., Rubenstein, D. I., & Selten, R. (2013). Fusing enacted and expected mimicry generates a winning strategy that promotes the evolution of cooperation. *Proceedings of the National Academy of Sciences USA, 110*, (pp. 10229–10233). <http://dx.doi.org/10.1073/pnas.1308221110>.

Fiske, S. T. (2015). Intergroup biases: A focus on stereotype content. *Current Opinion in Behavioral Sciences, 3*, 45–50. <http://dx.doi.org/10.1016/j.cobeha.2015.01.010>.

Fiske, S. T., & Markus, H. R. (Eds.). (2012). *Facing social class. How societal rank influences interaction*. New York: Russell Sage.

Fiske, S. T., Cuddy, A. J., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878–902. <http://dx.doi.org/10.1037/0022-3514.82.6.878>.

Fowler, J. H., & Kam, C. D. (2007). Beyond the self: Social identity, altruism, and political participation. *Journal of Politics, 69*, 813–827. <http://dx.doi.org/10.1111/j.1468-2508.2007.00577.x>.

Giddens, A. (2006). *Sociology* (5th ed.). Cambridge: Polity Press.

Guinote, A., Cotzia, I., Sandhu, S., & Siwa, P. (2015). Social status modulates prosocial behavior and egalitarianism in preschool children and adults. *Proceedings of the National Academy of Sciences USA, 112*, (pp. 731–736). <http://dx.doi.org/10.1073/pnas.1414550112>.

Handgraaf, M. J., Van Dijk, E., Vermunt, R. C., Wilke, H. A., & De Dreu, C. K. (2008). Less power or powerless? Egocentric empathy gaps and the irony of having little versus no power in social decision making. *Journal of Personality and Social Psychology, 95*, 1136–1149. <http://dx.doi.org/10.1037/0022-3514.95.5.1136>.

Harbaugh, W. T., Mayr, U., & Burghart, D. R. (2007). Neural responses to taxation and voluntary giving reveal motives for charitable donations. *Science, 316*, 1622–1625. <http://dx.doi.org/10.1126/science.1140738>.

Hauser, D. J., & Schwarz, N. (2015). Attentive Turkers: MTurk participants perform better on online attention checks than do subject pool participants. *Behavior Research Methods, 1–8*. <http://dx.doi.org/10.3758/s13428-015-0578-z>.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.

Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical and Statistical Psychology, 67*, 451–470. <http://dx.doi.org/10.1111/bmps.12028>.

Hilbig, B. E., Glöckner, A., & Zettler, I. (2014). Personality and prosocial behavior: Linking basic traits and social value orientations. *Journal of Personality and Social Psychology, 107*, 529–539. <http://dx.doi.org/10.1037/a0036074>.

Hoffman, E., McCabe, K., & Smith, V. L. (1996). Social distance and other-regarding behavior in dictator games. *The American Economic Review, 86*(3), 653–660 (Retrieved from <http://www.jstor.org/stable/2118218>).

Holm, H., & Engfeld, P. (2005). Choosing bargaining partners—An experimental study on the impact of information about income, status and gender. *Experimental Economics, 8*, 183–216. <http://dx.doi.org/10.1007/s10683-005-1463-x>.

Kang, M. J., Rangel, A., Camus, M., & Camerer, C. F. (2011). Hypothetical and real choice differentially activate common valuation areas. *The Journal of Neuroscience, 31*, 461–468. <http://dx.doi.org/10.1523/JNEUROSCI.1583-10.2011>.

Kim, H., & Markus, H. R. (1999). Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of Personality and Social Psychology, 77*, 785–800. <http://dx.doi.org/10.1037/0022-3514.77.4.785>.

Ko, S. J., Sadler, M. S., & Galinsky, A. D. (2015). The sound of power: Conveying and detecting hierarchical rank through voice. *Psychological Science, 26*, 3–14. <http://dx.doi.org/10.1177/0956797614553009>.

Korndörfer, M., Egloff, B., & Schmukle, S. C. (2015). A large scale test of the effect of social class on prosocial behavior. *PLoS One, 10*, e0133193. <http://dx.doi.org/10.1371/journal.pone.0133193>.

- Kraus, M. W. (2015). Americans still overestimate social class mobility: A pre-registered self-replication. *Frontiers in Psychology*, 6, 1709. <http://dx.doi.org/10.3389/fpsyg.2015.01709>.
- Kraus, M. W., & Keltner, D. (2009). Signs of socioeconomic status: A thin-slicing approach. *Psychological Science*, 20, 99–106. <http://dx.doi.org/10.1111/j.1467-9280.2008.02251.x>.
- Kraus, M. W., & Stephens, N. M. (2012). A road map for an emerging psychology of social class. *Social and Personality Psychology Compass*, 6, 642–656. <http://dx.doi.org/10.1111/j.1751-9004.2012.00453.x>.
- Kraus, M. W., & Tan, J. J. (2015). Americans overestimate social class mobility. *Journal of Experimental Social Psychology*, 58, 101–111. <http://dx.doi.org/10.1016/j.jesp.2015.01.005>.
- Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012a). Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review*, 119, 546–572. <http://dx.doi.org/10.1037/a0028756>.
- Kraus, M., Rheinschmidt, M., & Piff, P. (2012b). The intersection of resources and rank: Signaling social class in face-to-face encounters. In S. T. Fiske, & R. H. Markus (Eds.), *Facing social class: How societal rank influences interaction* (pp. 152–172). New York: Russell Sage Foundation.
- Murphy, R. O., & Ackermann, K. A. (2014). Social value orientation. Theoretical and measurement issues in the study of social preferences. *Personality and Social Psychology Review*, 18, 13–41. <http://dx.doi.org/10.1177/1088868313501745>.
- Murphy, R. O., Ackermann, K. A., & Handgraaf, M. J. J. (2011). Measuring social value orientation. *Judgment and Decision making*, 6, 771–781. <http://dx.doi.org/10.2139/ssrn.1804189>.
- Norton, M. I., & Ariely, D. (2011). Building a better America—One wealth quintile at a time. *Perspectives on Psychological Science*, 6, 9–12. <http://dx.doi.org/10.1177/1745691610393524>.
- Osberg, L., & Smeeding, T. (2006). "Fair" inequality? Attitudes toward pay differentials: The United States in comparative perspective. *American Sociological Review*, 71, 450–473. <http://dx.doi.org/10.1177/000312240607100305>.
- Paolacci, G., & Chandler, J. (2014). Inside the Turk. Understanding Mechanical Turk as a participant pool. *Current Directions in Psychological Science*, 23, 184–188. <http://dx.doi.org/10.1177/0963721414531598>.
- Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on Amazon Mechanical Turk. *Judgment and Decision making*, 5(5), 411–419 (Retrieved from <http://ssrn.com/abstract=1626226>).
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology*, 56, 365–392. <http://dx.doi.org/10.1146/annurev.psych.56.091103.070141>.
- Piff, P. K. (2014). Wealth and the inflated self: Class, entitlement, and narcissism. *Personality and Social Psychology Bulletin*, 40, 34–43. <http://dx.doi.org/10.1177/0146167213501699>.
- Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: The influence of social class on prosocial behavior. *Journal of Personality and Social Psychology*, 99, 771–784. <http://dx.doi.org/10.1037/a0020092>.
- Piff, P. K., Stancato, D. M., Côté, S., Mendoza-Denton, R., & Keltner, D. (2012). Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences*, 109, (pp. 4086–4091). <http://dx.doi.org/10.1073/pnas.1118373109>.
- Piketty, T., & Saez, E. (2014). Inequality in the long run. *Science*, 344, 838–843. <http://dx.doi.org/10.1126/science.1251936>.
- Ramirez-Valles, J. (2006). Volunteering in public health: An analysis of volunteers' characteristics and activities. *The International Journal of Volunteer Administration*, 24(2), 15–30.
- Rand, D. G., Peysakhovich, A., Kraft-Todd, G. T., Newman, G. E., Wurzbacher, O., Nowak, M. A., & Greene, J. D. (2014). Social heuristics shape intuitive cooperation. *Nature Communications*, 5, 3677. <http://dx.doi.org/10.1038/ncomms4677>.
- Savage, M., Devine, F., Cunningham, N., Taylor, M., Li, Y., Hjellbrekke, J., ... Miles, A. (2013). A new model of social class? Findings from the BBC's Great British class experiment. *Sociology*, 47, 219–250. <http://dx.doi.org/10.1177/0038038513481128>.
- Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. *Journal of Personality and Social Psychology*, 35, 656–666. <http://dx.doi.org/10.1037/0022-3514.35.9.656>.
- Stellar, J. E., Manzo, V. M., Kraus, M. W., & Keltner, D. (2012). Class and compassion: Socio-economic factors predict responses to suffering. *Emotion*, 12, 449–459. <http://dx.doi.org/10.1037/a0026508>.
- Stephens, N. M., Markus, H. R., & Phillips, L. T. (2014). Social class culture cycles: How three gateway contexts shape selves and fuel inequality. *Annual Review of Psychology*, 65, 611–634. <http://dx.doi.org/10.1146/annurev-psych-010213-115143>.
- Tyler, T. R. (2012). Justice and effective cooperation. *Social Justice Research*, 25, 355–375. <http://dx.doi.org/10.1007/s11211-012-0168-5>.
- Van Baaren, R. B., Holland, R. W., Steenaert, B., & van Knippenberg, A. (2003). Mimicry for money: Behavioral consequences of imitation. *Journal of Experimental Social Psychology*, 39, 393–398. [http://dx.doi.org/10.1016/S0022-1031\(03\)00014-3](http://dx.doi.org/10.1016/S0022-1031(03)00014-3).
- Van Doesum, N. J., Van Lange, D. A. W., & Van Lange, P. A. M. (2013). Social mindfulness: Skill and will to navigate the social world. *Journal of Personality and Social Psychology*, 105, 86–103. <http://dx.doi.org/10.1037/a0032540>.
- Van Doesum, N. J., Van Prooijen, J. W., Verburgh, L., & Van Lange, P. A. M. (2016). Social hostility in soccer and beyond. *PLoS One*, 11(4), e0153577. <http://dx.doi.org/10.1371/journal.pone.0153577>.
- Van Lange, P. A. M. (1999). The pursuit of joint outcomes and equality in outcomes: An integrative model of social value orientation. *Journal of Personality and Social Psychology*, 77, 337–349. <http://dx.doi.org/10.1037/0022-3514.77.2.337>.
- Van Lange, P. A. M., & Kuhlman, D. M. (1994). Social value orientations and impressions of partner's honesty and intelligence: A test of the might versus morality effect. *Journal of Personality and Social Psychology*, 67, 126–141. <http://dx.doi.org/10.1037/0022-3514.67.1.126>.
- Van Lange, P. A. M., & Van Doesum, N. J. (2015). Social mindfulness and mindful hostility. *Current Opinion in Behavioral Science*, 3, 18–24. <http://dx.doi.org/10.1016/j.cobeha.2014.12.009>.
- Van Lange, P. A. M., Bekkers, R., Schuyt, T. N. M., & Van Vugt, M. (2007). From games to giving: Social value orientation predicts donations to noble causes. *Basic and Applied Social Psychology*, 29, 375–384. <http://dx.doi.org/10.1080/01973530701665223>.
- Van Lange, P. A. M., Balliet, D. P., Parks, C. D., & Van Vugt, M. (2014). *Social dilemmas: The psychology of human cooperation*. Oxford: Oxford University Press.
- Wigboldus, D. H. J., Dijksterhuis, A., & Van Knippenberg, A. (2003). When stereotypes get in the way: Stereotypes obstruct stereotype-inconsistent trait inferences. *Journal of Personality and Social Psychology*, 84, 470–484. <http://dx.doi.org/10.1037/0022-3514.84.3.470>.
- Yamagishi, T., Hashimoto, H., & Schug, J. (2008). Preferences versus strategies as explanations for culture-specific behavior. *Psychological Science*, 19, 579–584. <http://dx.doi.org/10.1111/j.1467-9280.2008.02126.x>.